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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Appeal No.

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BRIEF FOR APPELLANTS

Ex Parte Takayuki Araki et al.

AQUEOUS DISPERSION OF VINYLIDENE
FLUORIDE POLYMER AND PREPARATION
PROCESS THEREOF

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Serial No. 09/095,842, filed June 11, 1998
Examiner: Peter A. Szekely
Group Art Unit: 1714

December 9, 2002 for

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I. INTRODUCTION

This is an appeal from the final rejection of claim 6 to 17. The final Office action mailed May 8, 2002, set forth four different rejections of applicant's claims. These rejections were all made under the first paragraph of 35 U.S.C. § 112. The invention claimed on appeal is free of prior art.

II. REAL PARTY IN INTEREST

The real party in interest is the owner of this application. At the time of the filing of this brief, the present application was owned by the assignee, Daikin Industries, Ltd.

III. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences that either directly affect or have a bearing on the decision in this appeal. The present application is a continued prosecution application (CPA) of U.S. serial No. 09/095,842, filed June 11, 1998; which is a continuation application of U.S. serial No. 08/612,865, filed March 13, 1996, now U.S. patent No. 5,925,705; which is a U.S. national phase application of international application PCT/JP94/01531, filed September 16, 1994.

IV. STATUS OF CLAIMS

Claims 6 to 17 stand finally rejected under 35 U.S.C. § 112, first paragraph. These claims were present in the application before the final Office action was issued, and no amendment was made to these claims after the final rejection. No other claims are present in the application.

V. STATUS OF AMENDMENTS

There are no outstanding amendments to the claims on appeal. Claims 6 to 17 on appeal are the same claims the examiner examined at the time of the final Office action. These claims are set forth in the attached appendix.

VI. SUMMARY OF THE INVENTION

The presently claimed invention relates to an aqueous dispersion of a fluorine-containing polymer usable for paints. More specifically, the presently claimed invention relates to an aqueous dispersion of a vinylidene fluoride (VdF) type polymer, which comprises a VdF polymer having a small particle size and a high solids content. The presently claimed invention also relates to a method for preparing a paint composition using the aqueous dispersion of a vinylidene fluoride (VdF) type polymer.

In the prior art, it was difficult to obtain a latex having both a small particle size and a high solids content. This was because the size of the

particles in a latex usually tended to increase together with a polymer concentration (high solids content). Further, in the prior art, when the amount of surfactant was increased, the particle size was reduced; but unfortunately, the polymer (solids) content was also reduced.

A preferred embodiment of the present invention includes the use of a combination of a fluorine-containing surfactant of not more than 1% by weight on the basis of water and a nonionic non-fluorine-containing surfactant from 0.001 to 0.1% by weight on the basis of water. This combination is used in an aqueous dispersion of a vinylidene fluoride polymer, so that the vinylidene fluoride polymer has an average particle size of not more than 200 nm and a solid content from 30 to 50% by weight. This preferred embodiment was claimed in a parent application, now U.S. patent No. 5,925,705

The invention set forth in the claims on appeal encompasses an aqueous dispersion of a vinylidene fluoride polymer having small particle size and high solids content using the fluorine-containing surfactant alone. The claims on appeal define an aqueous dispersion of a vinylidene fluoride polymer using a surfactant that consist essentially of at least one of a fluorine-containing surfactant, where the vinylidene fluoride polymer has a solid content from 30 to 50% by weight, and a small average particle size. The particle sizes in the claims on appeal are not more than 196.3 nm, 200 nm, or 320.1 nm.

VII. THE REFERENCES

There is no prior art rejection of the claims on appeal. Therefore, there are no references to consider in this appeal.

VIII. ISSUES

The issues on appeal are set forth below:

1. Whether the present specification disclosure describes the invention set forth in claims 6-11 in such a way as to enable one skilled in the art to which a pertains, or with which is most nearly connected, to make and/or use the invention claimed on appeal?
2. Whether the present specification disclosure reasonably conveys to one of ordinary skill that the inventors invented the subject matter defined in claims 6-11 on appeal?
3. Whether the present specification disclosure reasonably conveys to one of ordinary skill that the inventors invented the subject matter defined in claims 12-14 on appeal?
4. Whether the present specification disclosure reasonably conveys to one of ordinary skill that the inventors invented the subject matter defined in claims 15-17 on appeal?

IX. THE FINAL REJECTION

The final Office action set forth four rejections of applicant's claims under the first paragraph of 35 U.S.C. § 112. These rejections are:

1. Claims 6-11 were rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This rejection cited page 3, lines 6-12; page 4, lines 13-21; and page 6, lines 25-37, of applicant's specification disclosure.
2. Claims 6-11 were rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The final Office action stated that the nonionic, non fluorine-containing surfactant is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). This rejection cited page 3, lines 6-12; page 4, lines 13-21; and page 6, lines 25-37, of applicant's specification disclosure.
3. Claims 12-14 were rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in

the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The rejection stated that there is no mention in the specification of "an average particle size of not more than 320.1 nm."

4. Claims 15-17 were rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The rejection stated that there is no mention in the specification of "an average particle size of not more than 196.3 nm."

In support of these positions, the final Office action stated that applicant's invention is an aqueous dispersion of a polyvinylidene fluoride polymer, where said polymer has a particle size of no more than 200 nm, using a fluorine containing surfactant and a non-fluorine containing surfactant. The final rejection continued that there is no description in the instant specification of a process yielding the polymer with the claimed particle size using the fluorine containing surfactant alone.

X. GROUPING OF CLAIMS

Claims 6-11 are grouped together, claims 12-14 are grouped together, and claims 15-17 are grouped together. Separate arguments for the patentability of these groups are set forth below.

XI. ARGUMENTS

All the rejections to be considered in this appeal were made under the first paragraph of 35 U.S.C. § 112. The courts have long and clearly recognized that 35 U.S.C. § 112, first paragraph, includes a description of the invention requirement and an enablement requirement. *In re Bowen*, 492 F.2d 854, 181 USPQ 48 (CCPA 1974); *In re Smith*, 481 F.2d 910, 178 USPQ 620 (CCPA 1973); *In re Moore*, 439 F.2d 1232, 169 USPQ 236 (CCPA 1971). Thus, the first paragraph of 35 U.S.C. § 112 contains separate requirements for --

a description [1] of the invention, and [2] of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same

In the following arguments, these requirements of the first paragraph of 35 U.S.C. § 112 will be referred to respectively as the description requirement and the enablement requirement. The first rejection of claims 6-11 in the final rejection involves the enablement requirement. The remaining three rejections; including the second rejection of claims 6-11, the rejection of claims 12-14, and the rejection of claims 15-17 involve the description requirement.

1. ANY PERSON SKILLED IN THE PERTINENT ART WOULD EASILY BE ENABLED TO MAKE AND USE THE INVENTION SET FORTH IN CLAIMS 6-11 WITHIN THE MEANING OF 35 U.S.C. § 112, FIRST PARAGRAPH, AFTER A REVIEW OF APPLICANT'S SPECIFICATION DISCLOSURE.

Applicant's specification at page 4, line 7-12, describes a dispersion using only a fluorine-containing surfactant in the amount of not more than 1% by weight on the basis of water. In particular, this portion of applicant specification disclosure describes an aqueous dispersion of a fluorine-containing polymer, which comprises a VdF polymer having a particle size of not more than 200 nm and a solids content of 30 to 50% by weight and a fluorine-containing surfactant in an amount of not more than 1% by weight on the basis of water.

Applicant's specification disclosure explains that the addition of a very small amount of the nonionic non-fluorine-containing surfactant can be used alone to prepare an aqueous dispersion of a vinylidene fluoride polymer. See, for example, comparative examples 1-5 on pages 12 and 13 of applicant's specification disclosure. Comparative examples 1-3 use a fluorine-containing surfactant in an amount of not more than 1% by weight, in accordance with claims 6-11 on appeal. Comparative example 3 provides an aqueous dispersion having a particle size of 234.5 nm and a solids content of 32% by weight. This particle size is very close to the range of not more than 200 nm, and the solids content is within the range of between 30 and 50% by weight, as

set forth in claims 6-11 on appeal. Applicant respectfully submits that it is within the skill of the ordinary person skilled in this art to modify the parameters set forth in comparative example 3, so as to prepare an aqueous dispersion having a particle size within the range set forth in claims 6-11 on appeal.

A declaration under 37 C.F.R. § 1.132 was prepared by Mr. Nobuhiko Tsuda and attached to a response filed in a parent application on February 23, 1999. For easy review, a copy of this declaration (hereinafter referred to as the "first Tsuda declaration") is attached to this brief. The first Tsuda declaration demonstrates that the descriptions in applicant's specification disclosure at, for example, page 4, lines 7-12, and the limitations in claim 6-11 are enabled by the present specification. Namely, the first Tsuda declaration establishes that one of ordinary skill in the art, after a review of applicant's specification disclosure, would be enabled to prepare an aqueous dispersion of a vinylidene fluoride polymer, which comprises, *inter alia*, a vinylidene fluoride polymer having an average particle size of not more than 200 nm and a surfactant, wherein a solid content is from 30 to 50 % by weight, a content of the surfactant is not more than 1% by weight on the basis of water, and the surfactant consists essentially of at least one of a fluorine-containing surfactant, as defined in claims 6-11 on appeal.

In the first Tsuda declaration, the aqueous dispersion in accordance with comparative example 5 of the present application was initially prepared. This dispersion contained the nonionic non-fluorine-containing surfactant of an ammonium salt of perfluoro(octanoic acid) (PFOA) in an amount of 2.0% by weight to water, and a vinylidene fluoride polymer solid content of 31.5% with an average particle size of 196.3 nm. Thereafter, a portion of the fluorine-containing surfactant was removed to prepare an aqueous dispersion (solid content: 32.3 wt%, fluorine-containing surfactant content: 0.78 wt% to water, an average particle size: 198 nm). This concentrated aqueous dispersion having a low content of fluorine-containing surfactant was very stable for a long time and did not produce any precipitation of surfactant in the dry film.

In the first Tsuda declaration, the initially prepared dispersion containing 2.0% of the surfactant PFOA was diluted to obtain a diluted aqueous dispersion having a solid content of 15% by weight. The diluted aqueous dispersion was then concentrated using an evaporator for three hours in a hot-water bath of 80°C under a reduced pressure of 100 mm Hg. The resulting aqueous dispersion had a solid content of 32.3% by weight and an average particle size of 198 nm, and an amount of the surfactant PFOA of 0.78% by weight to water. While this dilution or concentration step is not described in applicant's specification disclosure, applicant respectfully submits that any person skilled in this art would know how to so dilute or concentrate an

aqueous dispersion. The diluting or concentrating of dispersions and compositions is within the skill of the art and can be performed by freshman chemistry students. For example, the use of an evaporator or other means to concentrate dispersions and compositions would not pose any difficulty for the skilled artisan.

In response to the first Tsuda declaration, the examiner indicated that this declaration does not show how to produce particles having an average particle size of less than 200 nm with the use of less than 1% fluorinated surfactant. However, applicant respectfully submits that claims 6-11 on appeal are not process claims for preparing an aqueous dispersion and, therefore, the examiner's comments are not pertinent. These claims define, *inter alia*, an aqueous dispersion with particles having an average particle size of less than 200 nm with a content of surfactant of not more than 1% by weight on the basis of water. These claims also define a method of using the aqueous dispersion to prepare a paint composition. In the first Tsuda declaration, a person of ordinary skill in the art, after reviewing the present specification disclosure, easily prepared an aqueous composition within the scope of claims 6-11. The showing in the first Tsuda declaration was not challenged in a manner that disputes that the invention claimed on appeal is supported in the present specification.

The examiner took the position that the declaration is new matter and stated that there is nothing in the specification about diluting the reaction product of comparative example 5 and recondensing it to yield a dispersion containing less than 1% surfactant. Applicant never attempted to amend the specification to contain the information set forth in the declaration.

Accordingly, the examiner's comments concerning the declaration being new matter are not pertinent to issues on appeal. Also not pertinent to the determination of whether or not applicant's specification disclosure would enable one of ordinary skill in the art to prepare the aqueous dispersion set forth in claim 6-11 on appeal is whether the specification describes the additional steps mentioned in the first Tsuda declaration. It is not necessary for applicant's specification disclosure to describe such routine procedures, such as diluting the reaction product of comparative example 5 and recondensing it to yield a dispersion containing less than 1% surfactant, because such procedures are well within the skill of the ordinary artisan.

While a patent must contain a description that enables one skilled in the art to make and use the claimed invention, an inventor does not need to explain every detail, since he is speaking to those skilled in the art. *DeGeorge v. Bernier*, 768 F.2d 1318, 226 USPQ 758 (Fed. Cir. 1985), *In re Howarth*, 654 F.2d 103, 105, 210 USPQ 689, 691 (CCPA 1981). Not every last detail is to be described, else patent specifications would turn into production specifications,

which they were never intended to be. *In re Gay*, 309 F.2d 769,774,50 CCPA 725,733, 135 USPQ 311, 316 (CCPA 1962). In fact, it is preferable that the patent specification omit what is well known in the art. *Spectra-Physics, Inc. v. Coherent, Inc.*, 827 F.2d 1524, 3 USPQ2d 1737 (Fed Cir. 1987), *cert. denied*, 484 U.S. 954 (1987).

The diluting and concentrating of dispersions and compositions is within the skill of the art and can be performed by freshman chemistry students. Adding an additional solvent to dilute a solution is performed by ordinary people every day, such as when a detergent concentrate is diluted for use by adding water. Furthermore, the use of an evaporator or other means to concentrate dispersions and compositions would not pose any difficulty for the skilled artisan.

Applicant respectfully submits that while the dilution and concentration steps used in the first Tsuda declaration are not described in applicant's specification disclosure, any person skilled in this art would know how to so dilute and concentrate an aqueous dispersion. The diluting and concentrating of dispersions and compositions is easily within the skill of the art and surely cannot amount to undo experimentation.

As explained in *In re Wands*, 858 F.2d 731, 8 USPQ2d 1400 (Fed. Cir. 1988), the factors to be considered in determining whether a disclosure would require undo experimentation include:

- (1) the quantity of experimentation necessary,
- (2) the amount of direction or guidance presented,
- (3) the presence or absence of working examples,
- (4) the nature of the invention,
- (5) the state of the prior art,
- (6) the relative skill of those in the art,
- (7) the predictability or unpredictability of the art, and
- (8) the breadth of the claims.

The diluting and concentrating steps in the first Tsuda declaration require very little or no experimentation (1). Since the steps are very basic chemistry procedures, no direction or guidance is necessary in applicant's specification in order for one of ordinary skill in the art to perform the same (2). Applicant's specification contains working examples that place one of ordinary skill in the art very close to the invention set forth in claim 6-11 on appeal (3). Very little additional work is necessary. The nature of the invention involves an aqueous dispersion, which is very common in the art (4). Since aqueous dispersions are very common in the art, the state of the prior art is very high (5). This means that a person of ordinary skill in this art would surely know how to perform dilutions and concentrations, such as set forth in the first Tsuda declaration. Those of ordinary skill in the pertinent art would normally have a doctorate in chemistry (6). The diluting and concentrating of aqueous

dispersions is very predictable in the chemical art (7). Finally, the claims define a narrow dispersion (8). Weighing these factual consideration, applicant respectfully submits that the only reasonable conclusion is that the additional steps performed in the first Tsuda declaration can amount to know more than minor experimentation, and not undo experimentation. Therefore, applicant respectfully submits that the Tsuda declaration demonstrates that one of ordinary skill in the art following the teachings of the present specification disclosure would easily be enabled to make and use the invention as set forth in claims 6-11 on appeal, within meaning of 35 U.S.C. § 112, first paragraph. For these reasons, applicant respectfully requests that this honorable Board reverse the examiner's rejection of claims 6-11 under 35 devastates code § 112, first paragraph.

In support of this rejection, the examiner interpreted various portions of applicant's specification as explaining that the nonionic, non-fluorine-containing surfactant must be present in a trace amount of 0.001 to 0.1% in order to obtain a particle size below the 200 nm threshold. Applicant respectfully submits that these arguments by the examiner are misplaced. These arguments appear to be more pertinent to the question of whether not applicant's specification disclosure provides a written description of the invention set forth in claims 6-11 on appeal, which will be discussed in the next section of this appeal brief.

The question of whether not the nonionic, non-fluorine-containing surfactant must be present in a trace amount of 0.001 to 0.1% in order to obtain a particle size below the 200 nm threshold could possibly be pertinent to the issue of whether claim 6-11 on appeal read on an inoperative dispersion. However, applicant respectfully submits that it is not a function of the claims to specifically exclude possible inoperative combinations. *Atlas Powder Co. v. E.I. du Pont de Nemours & Co.*, 750 F.2d 1569, 224 USPQ 409 (Fed. Cir. 1984), *In re Dinh-Nguyen*; 492 F.2d 856, 858-59, 181 USPQ 46,48 (CCPA 1974) (emphasis omitted); *Accord, In re Geerdes*, 491 F.2d 1260, 1265, 180 USPQ 789, 793 (CCPA 1974); *In re Anderson*, 471 F.2d 1237, 1242, 176 USPQ 331, 334-35 (CCPA 1973).

For the foregoing reasons, applicant respectfully submits that the present specification disclosure would enable one of ordinary skill in the art to make and use an aqueous dispersion of a fluorine-containing polymer, which comprises a VdF polymer having a particle size of not more than 200 nm and a solids content of 30 to 50% by weight and a fluorine-containing surfactant in an amount of not more than 1% by weight on the basis of water, as required in claims 6-11 on appeal. Therefore, applicant respectfully requests that this honorable Board reversed the examiner's rejections of claims 6-11 under 35 U.S.C. § 112, first paragraph.

2. THE PRESENT SPECIFICATION DISCLOSURE REASONABLY CONVEYS TO ONE OF ORDINARY SKILL IN THE ART THAT THE INVENTORS, AT THE TIME THE PRESENT APPLICATION WAS FILED, INVENTED THE SUBJECT MATTER DEFINED IN CLAIMS 6-11, WITHIN MEANING OF 35 U.S.C. § 112, FIRST PARAGRAPH.

Applicant respectfully submits that the present specification both enables and provides an appropriate written description of the invention as set forth in claim 6-11 on appeal within the meaning of the first paragraph of 35 U.S.C. § 112. Applicant's specification at page 3, line 34, through page 4, line 4, and page 4, line 7-12, describes a dispersion using only a fluorine-containing surfactant in the amount of not more than 1% by weight on the basis of water, thereby providing a written description of the invention that corresponds precisely to that defined in claim 6 on appeal.

Claims 6-11 were rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The first rejection of claims 6-11 under 35 U.S.C. § 112, first paragraph, was discussed above in connection with the enablement requirement. Here, applicant will discuss the second rejection of claims 6-11 on appeal under 35 U.S.C. § 112, first paragraph, in connection with the written description requirements. When making this rejection, the examiner interpreted applicant's specification. Based on his interpretation of the specification, the examiner concluded that

the desired particle size cannot be achieved without the presence of a non-ionic, non-fluorine-containing surfactant in a trace amount of 0.001 to 0.1%. When initially making this rejection, the examiner quoted three portions of applicant's specification in support of his position, which are reproduced below. These portions of applicant's specification were page 3, line 6-12, page 4, line 13-21, and page 6, lines 25-37. The examiner concluded that these quotes of applicant's specification show that the composition claimed in claim 6-12 cannot be made, unless a non-ionic non-fluorine containing surfactant is also use, which means that it has to be present in the claim composition.

Applicant respectfully submits that the first quote was taken out of context and that the complete quote does not support the positions proffered by the examiner. Below, the first quote as noted by the examiner is set forth together with additional text surrounding the quote, which additional text is necessary for a proper understanding of the quote in question. In the following quotes, the additional text is set forth in italics.

Usually the particle size of the latex tends to increase together with a polymer concentration, and when the fluorine-containing surfactant is use only and if its amount is not more than 1 % by weight, there cannot be obtained a particle size of not more than 200 nm if the solid content is assumed to be 30 to 50 % by weight.

The key word is "usually." This word in conjunction with the remaining portion of this sentence means that *usually* if the amount of the fluorine-containing surfactant is not more than 1% by weight, there cannot be obtained

a particle size of not more than 200nm, if the solid content is assumed to be 30 to 50% by weight. Usually does not mean always. Thus, claim 6 on appeal is consistent with this sentence in that the particle size could be not more than 200 nm if the amount of the fluorine-containing surfactant is not more than 1% by weight.

The third quote of the examiner is repeated below with emphasis added:

In order to prepare the aqueous dispersion which comprises the VdF polymer having a particle size of not more than 200 nm and contains solids in the amount of 30 to 50% by weight, it is usually necessary to use a large amount of fluorine containing surfactant. However, according to the preparation process of the present invention, it is possible to decrease the amount of fluorine-containing surfactant to a small amount not more than 1% by weight by adding a trace amount of nonionic non-fluorine-containing surfactant. Namely, a small particle size of not more than 200 nm can be obtained by adding the nonionic non-fluorine-containing surfactant. (emphasis added.)

Here, again the key word is "usually." Simply because applicant's specification says that something is "usual" does not mean that it is impossible or not within the scope of the invention to decrease the amount of fluorine-containing surfactant to a small amount of not more than 1% by weight without the addition of any nonionic non-flourine-containing surfactant and still obtained a particle size of not more than 200 nm. Unusual does not mean not enabled.

The second quote set forth by the examiner reads as follows:

It is *possible* in the present invention that into the known emulsion polymerization system, notwithstanding that the solid

content is as high as 30 to 50% by weight, the particle size can be decreased to not more than 200 nm by adding a nonionic non-fluorine-containing surfactant in a trace amount of 0.001 to 0.1% by weight on the basis of water in the presence of a small amount of the fluorine-containing surfactant, i.e. not more than 1% by weight, on the basis of water. (emphasis added.)

The key word here is "possible." Simply because something is possible does not mean that something else is not possible. In other words, while it may be possible that the present invention can obtain a decrease in particle size to not more than 200 nm with a solid content as high as 30 to 50% by the addition of a nonionic non-flourine-containing surfactant in a trace amount of 0.001 to 0.1% by weight on the basis of water in the presence of a small amount of fluorine-containing surfactant (not more than 1% by weight) on the basis of water, does not mean that it is not possible within the scope of the invention to obtain the same solid content and particle size without the addition of the nonionic non-flourine-containing surfactant.

In response to the foregoing arguments, the examiner stated that the words seized upon by applicants, i.e. "usually" and "possible" are not the key words. The examiner continued that the key word is "cannot." The examiner then again interpreted applicant's specification as stating that the particle size cannot be lowered below the 200 nm threshold without the presence of a non-ionic, non-fluoride containing surfactant together with the fluorine-containing surfactant.

The only place in the specification where the word “cannot” occurs is at page 3, line 8. However, the sentence containing the word “cannot” begins with the word “usually.” Applicant respectfully submits that there is a significant difference between stating that something “cannot” be done and stating that something “usually cannot” be done. The latter expression, as used in the present specification, leaves open the possibility that “cannot” is not absolute. Accordingly, applicant respectfully submits that the examiner has not correctly interpreted the English in applicant’s specification. Furthermore, the discussion at page 3, lines 5-10, of applicant’s specification (the only place in the specification containing the word “cannot”) occurs in the discussion about the background art, and not the present invention. Accordingly, the use of the word “cannot” in this portion of the specification is irrelevant to the written description or enablement of the presently claimed invention by the remaining portions of the specification.

From the above, applicant respectfully submits that the examiner has not sustain the burden of presenting reasons why appellant’s claims are not supported by the specifications. As explained above, appellant’s specification contains a description of the claimed invention albeit not in *ipsis verbis* (in the identical words) and, accordingly, the examiner must provide reasons why one of ordinary skill in the art would not consider the description in appellant’s specification sufficient. The positions set forth by the examiner are nothing

more than an argument of lack of literal support which is not enough to sustain the burden of supporting the rejection. If lack of literal support alone were enough to support a rejection under §112, then the statement of *In re Lukach*, 442 F.2d 967, 169 USPQ 795 (CCPA 1971); "the invention claimed does not have to be describe in *ipsis verbis* in order to satisfy description requirements of §112" is empty verbiage. *In re Wertheim*, 541 F.2d 257, 191 USPQ 91, 98 (CCPA 1976).

In order to comply with 35 U.S.C. §112, first paragraph, all that is required is that the application reasonably conveys to persons skilled in the art that, as of the filing date thereof, the inventor had possession of the subject matter later claimed by him. *In re Edwards*, 568 F.2d 1349, 196 USPQ 465 (CCPA 1975). The basic premise is that the test for determining whether the disclosure complies with the description of the invention requirement is whether it would have reasonably conveyed to one of ordinary skill in the art that the inventor invented the later-claimed subject matter. *In re Kaslow*, 707 F.2d 1366, 217 USPQ 1089, 1096 (Fed. Cir. 1983). The invention claimed does not have to be described *ipsis verbis* (in the identical words) in order to satisfy the description requirement the first paragraph of Section 112. *Martin v. Johnson*, 172 USPQ 391, 395 (CCPA 1972); *Case v. CPC International, Inc.*, 730 F.2d 745, 221 USPQ 196, 201 (Fed. Cir.), *cert. denied*, 469 U.S. 874, 224 USPQ

736 (1984), *Fujikawa v. Wattanasin*, 93 F.3d 1559, 39 USPQ2d 1895 (Fed. Cir. 1996).

Attention is respectfully directed to applicant's specification disclosure from page 3, line 34, through page 4, line 12. This portion of applicant's specification disclosure read as follows:

The present invention has been made to solve the above-mentioned of problems, and it is an object of the present invention to provide an aqueous dispersion of a fluorine-containing polymer, which comprises a VdF polymer having a particle size as small as not more than 200 nm and contains solids in an amount as high as 30 to 50% by weight and a surfactant in an amount as low as not more than 1% by weight on the basis of water, and it's preparation process.

DISCLOSURE OF THE INVENTION

The present invention relates to an aqueous dispersion of a VdF polymer, which comprises a VdF polymer having a particle size of not more than 200 nm, as a solids content of 30 to 50% by weight and contains a fluorine-containing surfactant in an amount of not more than 1% by weight on the basis of water.

These portions of applicant's specification disclosure specifically describe an aqueous dispersion of a vinylidene fluoride polymer, which comprises a vinylidene fluoride polymer having an average particle size of not more than 200 nm and a surfactant, wherein a solid content is from 30 to 50 % by weight, a content of the surfactant is not more than 1% by weight on the basis of water, and the surfactant consists essentially of at least one of a fluorine-containing surfactant, as required in claims 6-11 on appeal.

Applicant respectfully submits that this portion of this present specification disclosure provides literal support for the invention in claims 6-11 on appeal. Comparative examples 1-5 on pages 12 and 13 of applicant's specification disclosure provide further support for the invention defined in claims 6-11 on appeal. Comparative examples 1-3 use a fluorine-containing surfactant in an amount of not more than 1% by weight, in accordance with claims 6-11 on appeal. Comparative example 3 provides an aqueous dispersion having a particle size of 234.5 nm, a solids content of 32% by weight, and a fluorine-containing surfactant of not more than 1% by weight on the basis of water. This particle size is very close to the range of not more than 200 nm, and the solids content is within the range of between 30 and 50% by weight, as set forth in claims 6-11 on appeal.

For the foregoing reasons, applicant respectfully submits that the present specification provides a written description of the invention set forth in claims 6-11 on appeal within meaning of 35 U.S.C. § 112, first paragraph. Therefore, applicant respectfully requests that this honorable Board reversed the examiner's rejections of claims 6-11 under 35 U.S.C. § 112, first paragraph.

3. COMPARATIVE EXAMPLE 4 IN APPLICANT'S SPECIFICATION DISCLOSURE PROVIDES A WRITTEN DESCRIPTION OF THE SUBJECT MATTER DEFINED IN CLAIMS 12-14.

Table 1 on page 13 of applicant's specification disclosure summarizes data corresponding to examples 1-4 and comparative examples 1-4 of applicant's specification. The top of page 5 of applicant's specification disclosure explains of the particle size measurements in table 1 are an average particle size obtained by measuring the particles sizes with a laser beam scattering particle size analyzer. Thus, a particle size of 320.1 in table 1 means an average particle size of 320.1 nm. As explained elsewhere in applicant's specification disclosure, the invention in this application is directed to particle sizes smaller than a specific limit. The limit in claims 6-11 on appeal is an average particle size of 200 nm. Accordingly, applicant respectfully submits that comparative examples 4 and 5 showing particle sizes of 196.3 and 320.1 in table 1 on page 13 of applicant's specification disclosure would be understood by those skilled in the art, as describing a particle size of not more than 196.3 nm or not more than 320.1 nm, as required in claims 12-17 on appeal.

The aqueous dispersion prepared in comparative example 4 of the present application is within the scope of appealed claims 12-14 that define an aqueous dispersion of a vinylidene fluoride polymer, which comprises a vinylidene fluoride polymer having an average particle size of not more than 320.1 nm, wherein a solid content is from 30 to 50 % by weight, and a content

of a fluorine-containing surfactant is not more than 1% by weight on the basis of water. Any person skilled in the pertinent art desiring to practice the invention set forth in claims 12-14 would easily be enabled to make and use such a dispersion by simply following the procedures of comparative example 4 in applicant's specification disclosure.

Thus, comparative example 4 establishes that at the time the application was filed, the applicant had in his possession an aqueous dispersion such as that set forth in the claims 12-14 on appeal. Further, this comparative example also enables one of ordinary skill in the art to make the invention as set forth in the claims, because what is in the claims is the same as what is in the comparative example. In other words, comparative example 4 in the present specification provides both a written description of the invention as set forth in claims 12-14 on appeal and an enabling disclosure of claims 12-14 on appeal, as required by the first paragraph of 35 U.S.C. § 112. Therefore, applicant respectfully requests that this honorable Board reverse the rejection of claims 12-14 under 35 U.S.C. § 112, first paragraph.

4. COMPARATIVE EXAMPLE 5 IN APPLICANT'S SPECIFICATION
DISCLOSURE PROVIDES A WRITTEN DESCRIPTION OF THE
SUBJECT MATTER DEFINED IN CLAIMS 15-17.

Comparative example 5 on pages 12 and 13 of applicant's specification disclosure describes the preparation of an aqueous dispersion of a vinylidene

fluoride polymer, which comprises a vinylidene fluoride polymer having an average particle size of 196.3 nm, a solid content from 30 to 50 % by weight, and a content of a fluorine-containing surfactant is not more than 2 % by weight on the basis of water. The dispersion prepared in this comparative example does not contain a nonionic non-fluorine-containing surfactant and contains particles with a size of 196.3 nm.

The aqueous dispersion prepared in comparative example 5 of the present application is within the scope of appealed claims 15-17 that define an aqueous dispersion of a vinylidene fluoride polymer, which comprises a vinylidene fluoride polymer having an average particle size of not more than 196.3 nm, wherein a solid content is from 30 to 50 % by weight, and a content of a fluorine-containing surfactant is not more than 1% by weight on the basis of water. Any person skilled in the pertinent art desiring to practice the invention set forth in claims 15-17 would easily be enabled to make and use such a dispersion by simply following the procedures of comparative example 5 in applicant's specification disclosure.

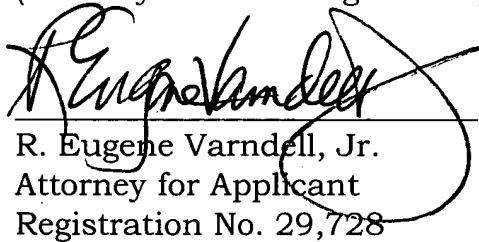
Thus, comparative example 5 establishes that at the time the application was filed, the applicant had in his possession an aqueous dispersion such as that set forth in the claims 15-17 on appeal. Further, this comparative example also enables one of ordinary skill in the art to make the invention as set forth in the claims, because what is in the claims is the same as what is in

the comparative example. In other words, comparative example 5 in the present specification provides both a written description of the invention set forth in claims 15-17 on appeal and an enabling disclosure of claims 15-17 on appeal, as required by the first paragraph of 35 U.S.C. § 112. Therefore, applicant respectfully requests that this honorable Board reverse the rejection of claims 15-17 under 35 U.S.C. § 112, first paragraph.

XII. CONCLUSION

For the foregoing reasons, appellant respectfully submits that examiner's decision rejecting the claims on appeal under the provisions of 35 U.S.C. § 112, first paragraph, constitutes unsupported, arbitrary, and erroneous conclusions of fact and law. Therefore, it is respectfully requested that this honorable Board reverse the two separate rejections of claims 6-11, the rejection of claims 12-14, and the rejection of claims 15-17, all made under 35 U.S.C. § 112, first paragraph.

Respectfully submitted,
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APPENDIX

6. An aqueous dispersion of a vinylidene fluoride polymer, which comprises a vinylidene fluoride polymer having an average particle size of not more than 200 nm and a surfactant, wherein a solid content is from 30 to 50 % by weight, a content of the surfactant is not more than 1% by weight on the basis of water, and the surfactant consists essentially of at least one of a fluorine-containing surfactant.

7. The aqueous dispersion of Claim 6, wherein the fluorine-containing surfactant is at least one member selected from the group consisting of a fluorine-containing carboxylic acid represented by the formula: $X(\text{CF}_2)_n\text{COOH}$ and $Y(\text{CH}_2\text{CF}_2)_m\text{COOH}$ where n is an integer of 6 to 20, X is F or H, m is an integer of 6 to 13, and Y is F or Cl, an alkali metal salt thereof, an ammonium salt thereof, an amine salt thereof and a quaternary ammonium salt thereof.

8. The aqueous dispersion of Claim 7, wherein the fluorine-containing surfactant is an ammonium salt of perfluorooctanoic acid.

9. A method for preparing a paint composition, which comprises blending a coloring agent with an aqueous dispersion of a vinylidene fluoride polymer, which comprises a vinylidene fluoride polymer having an average particle size of not more than 200 nm and a surfactant, wherein a solid content is from 30 to 50% by weight, a content of the surfactant is not more than 1%

by weight on the basis of water, and the surfactant consists essentially of at least one of a fluorine-containing surfactant.

10. The method of Claim 9, wherein the fluorine-containing surfactant is at least one member selected from the group consisting of a fluorine-containing carboxylic acid represented by the formula: $X(\text{CF}_2)_n\text{COOH}$ and $Y(\text{CH}_2\text{CF}_2)_m\text{COOH}$ where n is an integer of 6 to 20, X is F or H, m is an integer of 6 to 13, and Y is F or Cl, an alkali metal salt thereof, an ammonium salt thereof, an amine salt thereof and a quaternary ammonium salt thereof.

11. The method of Claim 10, wherein the fluorine-containing surfactant is an ammonium salt of perfluorooctanoic acid.

12. An aqueous dispersion of a vinylidene fluoride polymer, which comprises a vinylidene fluoride polymer having an average particle size of not more than 320.1 nm, wherein a solid content is from 30 to 50 % by weight, and a content of a fluorine-containing surfactant is not more than 1% by weight on the basis of water.

13. The aqueous dispersion of Claim 12, wherein the fluorine-containing surfactant is at least one member selected from the group consisting of a fluorine-containing carboxylic acid represented by the formula: $X(\text{CF}_2)_n\text{COOH}$ and $Y(\text{CH}_2\text{CF}_2)_m\text{COOH}$ where n is an integer of 6 to 20, X is F or H, m is an integer of 6 to 13, and Y is F or Cl, an alkali metal salt thereof, an ammonium salt thereof, an amine salt thereof and a quaternary ammonium salt thereof.

14. The aqueous dispersion of Claim 12, wherein the fluorine-containing surfactant is an ammonium salt of perfluorooctanoic acid.

15. An aqueous dispersion of a vinylidene fluoride polymer, which comprises a vinylidene fluoride polymer having an average particle size of not more than 196.3 nm, wherein a solid content is from 30 to 50 % by weight, and a content of a fluorine-containing surfactant is not more than 2% by weight on the basis of water.

16. The aqueous dispersion of Claim 15, wherein the fluorine-containing surfactant is at least one member selected from the group consisting of a fluorine-containing carboxylic acid represented by the formula: $X(CF_2)_nCOOH$ and $Y(CH_2CF_2)_mCOOH$ where n is an integer of 6 to 20, X is F or H, m is an integer of 6 to 13, and Y is F or Cl, an alkali metal salt thereof, an ammonium salt thereof, an amine salt thereof and a quaternary ammonium salt thereof.

17. The aqueous dispersion of Claim 15, wherein the fluorine-containing surfactant is an ammonium salt of perfluorooctanoic acid.